CLAIMS

1. A method for controlling the transmission data rate of a multimedia data stream in a session-based streaming environment comprising a media server and a destination terminal, wherein a session control protocol is employed to control the multimedia data stream, the method being performed at the media server and comprising the steps of:

   transmitting the multimedia data stream from the media server to the destination terminal according to a multimedia streaming protocol,

   receiving session control data from the destination terminal,

   calculating a data rate value of the multimedia data stream based on the session control data, and

   controlling the data rate of the multimedia data stream based on the calculated data rate value.

2. The method according to claim 1, wherein the session control data comprises time stamps or packet loss report blocks for reporting losses of data packets which are employed to transmit the multimedia data stream or time stamps and packet loss report blocks.

3. The method according to claim 2, wherein in the step of calculating, the media server calculates a loss event rate and a round-trip time between the media server and the destination terminal based on the received time stamps and the packet loss report blocks.

4. The method according to claim 3, wherein in the step of calculating, the media server calculates the data rate value based on the loss event rate and the round-trip time.

5. The method according to claim 4, wherein the media server calculates the data rate value based on a size of the data packets used to transmit the multimedia data stream.

6. The method according to one of claims 1 to 5, further comprising the step of initialising a session for the transmission of the multimedia data stream.

7. The method according to claim 6, wherein the step of initialising comprises transmitting a report interval information to the destination terminal, wherein the time interval between transmissions of session control data from the destination terminal to the media server is determined based on the report interval information.

8. The method according to claim 7, wherein the session control data is comprised in receiver reports sent from the destination terminal to the media server according to the RTP/RTCP specifications and extended reports sent from the destination terminal to the media server for reporting a packet loss rate.

9. The method according to claim 7 or 8, wherein the report interval information comprises report ratio information determining the ratio of the number of said receiver reports and the number of said extended reports.

10. The method according to one of claims 1 to 9, wherein the multimedia data stream and the session control data are transmitted in data packets, wherein the data packets comprise a sequence number and further comprising the step of storing a transmission time and the sequence number of the data packets transmitted to the destination terminal in a memory.

11. The method according to one of claims 1 to 10, further comprising the steps of:

estimating the fill-status of a buffer at the destination terminal, wherein the buffer is used for buffering the received multimedia data stream,

increasing the data rate of the multimedia data stream, in case the estimated fill-status indicates a possible buffer under-run, and

decreasing the data rate of the multimedia data stream, in case the estimated fill-status indicates a possible buffer-overflow.

12. The method according to claim 11, wherein the multimedia streaming protocol is the Real-time Transport Protocol (RTP) and the session control protocol is the RTP Control Protocol (RTCP).

13. The method according to claim 12, wherein the session control data used for calculating the data rate value is comprised in at least one of receiver reports,

loss report blocks, receiver timestamp report blocks, and delay since last receiver report blocks.

14. A media server for controlling the transmission data rate of a multimedia data stream in a session-based streaming environment comprising the media server and a destination terminal, wherein a session control protocol is employed to control the multimedia data stream, the media server comprising:

transmission means for transmitting the multimedia data stream from the media server to the destination terminal using a multimedia streaming protocol,

receiving means for receiving session control data from the destination terminal,

calculation means for calculating a data rate value of the multimedia data stream based on the session control data and

control means for controlling the data rate of the multimedia data stream based on the calculated data rate value.

15. The media server according to claim 14, adapted to perform the method according steps according to one of claims 1 to 13.

16. A destination terminal adapted to perform communications with a media server according to claim 14 or 15.

17. The destination terminal according to claim 16, further comprising

receiving means for receiving a report interval information from the media server, wherein the time interval between transmissions of session control data and/or the ratio of transmissions of session control data is determined based on the report interval information and

transmission means for transmitting session control data to the media server based on the report interval value.

18. The destination terminal according to claim 16 or 17, further comprising a buffer for buffering the received multimedia data stream.

19. A media streaming system comprising at least one media server according to claim 14 or 15 and at least one destination terminal according to one of claims 16 to 18.